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# Human resource management–well-being–performance research revisited: Past, present, and future

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## Abstract

The authors provide an up-to-date theoretically based qualitative review of research dealing with the relationship between HRM, employee well-being, and individual/organisational performance (HRM-WB-IOP research). The review is based on a systematic critical analysis of all HRM-WB-IOP studies ( $N = 46$ ) published in 13 core HRM and management journals in the 2000 to 2018 period. The authors first identify different theoretical models of the HRM-WB-IOP relationship, which they then use to map research in the area. The results show that mutual gains conceptualisations play a dominant role in extant HRM-WB-IOP research, at the expense of alternative conflicting outcomes and mutual losses models, which are also shown to receive very limited empirical support across the 46 studies. As part of this mapping exercise, the authors identify important knowledge gaps in the area and conclude by setting out a number of key recommendations for future research to address these gaps.

## KEYWORDS

employee well-being, HRM, individual and organisational performance, qualitative review

The references of the 46 studies included in our review can be found in the Appendix.

\*Both authors contributed equally and names appear in alphabetical order.

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## 1 | INTRODUCTION

Over the past 20 years or so, there has been growing interest in the effect that human resource management (HRM) systems have not only on organisational performance but also on employee outcomes including, in particular, various aspects of employee well-being (WB; Appelbaum, Bailey, Berg, & Kalleberg, 2000; Godard, 2001a; Guest, 2002; Jackson, Schuler, & Jiang, 2014; Wright & Boswell, 2002). As part of this growing strand of so-called employee-centred HRM research (Peccei & Van De Voorde, 2019), HRM scholars have focused not only on the effect that HRM systems have on WB as an important issue in its own right (Guest, 1999) but also on WB as a key mechanism that may help to explain the effect of HRM systems on various aspects of both individual and organisational performance (Peccei, 2004). Our interest here is in that important and growing body of HRM research that focuses explicitly on the relationship between HRM, WB, and individual and/or organisational performance (IOP), HRM-WB-IOP research for short, rather than in studies that are primarily concerned with the impact of HRM on either well-being or performance.

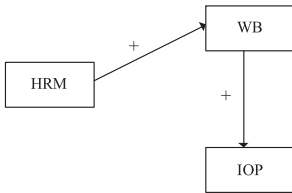
To our knowledge, the last major reviews of HRM-WB-IOP research were those conducted by Van De Voorde, Paauwe, and Van Veldhoven (2012) and Peccei, Van De Voorde, and Van Veldhoven (2013). The bulk of the studies covered in these reviews was published before 2010. Since then, many more HRM-WB-IOP studies have been published. Given this growing interest, a systematic review of research in this area is, we believe, both timely and important. As we explain more fully below, in terms of HRM, our interest here is in studies that focus on multiple sets or systems of HR practices, rather than on individual practices. In line with previous reviews, in terms of WB, the interest is in studies that consider any form of either psychological or so-called “happiness” well-being (e.g., positive affect, job satisfaction, and affective commitment) or of health-related well-being (e.g., job stress, burnout, and anxiety; Grant, Christianson, & Price, 2007; Warr, 2007). Similarly, in terms of performance, we also take quite a broad view and consider studies that have focused on any major form of either individual performance (e.g., in-role and contextual job performance) or organisational level performance (e.g., unit productivity and financial performance).

Based on these broad parameters and coverage, the aim of the present qualitative review is two-fold. First is to provide an up-to-date and systematic theoretically based critical overview of extant research in the area as a basis for mapping existing theoretical and empirical knowledge and understanding of the HRM-WB-IOP relationship. Second, based on this mapping exercise, is to identify key knowledge gaps and, therefore, avenues for future research. The aim here is to help structure theoretical and methodological debate in the area by setting out a clear set of options and lines for future HRM-WB-IOP research.

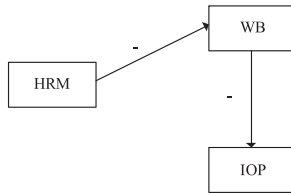
## 2 | THE HRM-WB-IOP RELATIONSHIP: THEORETICAL MODELS

The relationship between HRM, WB, and IOP has been conceptualised in a number of different ways in the extant literature. In principle, there are literally scores of ways in which these three variables might be related depending, for example, on the strength and direction of the relationships between them and on whether the links involved are positive or negative. In practice, however, extant studies have focused on a small subset of possible HRM-WB-IOP models. In particular, the primary interest to date has been in the role that HRM plays in terms of both WB and IOP. Hence, the dominant focus has been on “HRM-driven” models of the HRM-WB-IOP relationship, where the direction of causality is assumed to go from HRM to either WB or IOP or both. Hence, it is on this family of HRM-driven models that we focus on here.

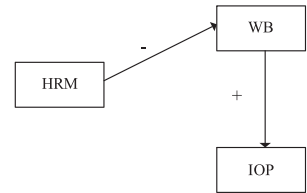
Here, as part of our systematic review of HRM-WB-IOP research, we start by providing a brief theoretical overview of the area by considering the main types of HRM-driven models that have been proposed and tested in extant studies. In particular, we identify three main types of HRM-driven models and consider the basic logic underpinning each type: full mediation, partial mediation, and parallel outcomes models of the HRM-WB-IOP relationship. As shown in Figure 1, within each main type, it is possible to distinguish a number of more specific models depending

*Type 1: Full Mediation Models*

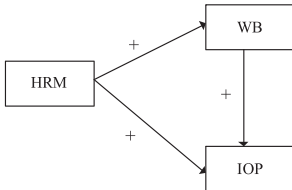
Type 1(a): Mutual Gains



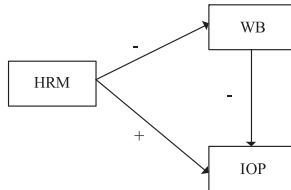
Type 1(b): Conflicting Outcomes



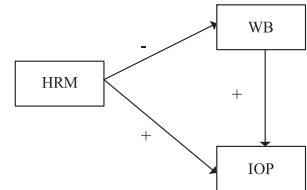
Type 1(c): Mutual Losses

*Type 2: Partial Mediation Models*

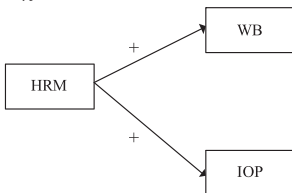
Type 2(a): Mutual Gains



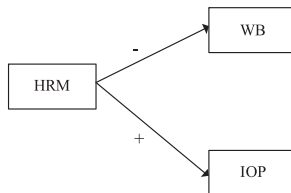
Type 2(b): Conflicting Outcomes



Type 2(c): Mutual Losses

*Type 3: Parallel Outcomes Model*

Type 3(a): Mutual Gains



Type 3(b): Conflicting Outcomes

**FIGURE 1** HRM-WB-IOP models

on whether the core HRM-WB, HRM-IOP, and/or WB-IOP component links in the model are hypothesised to be either positive or negative.

## 2.1 | Full mediation models

The first major group of HRM-driven models are full mediation ones (Type 1). The key common feature of these models is that they hypothesise some form of fully mediated relationship between HRM and IOP in which employee WB acts as the core mediator. As shown in Figure 1, however, these models can take a variety of forms. In particular, three main kinds of full mediation models can be distinguished depending on the precise nature of the mediation involved. Specifically, the key distinction here is between full mediation models that are rooted in and emphasise a (a) mutual gains, (b) conflicting outcomes, or (c) mutual losses perspective of the HRM-WB-IOP relationship (Peccei et al., 2013; Van De Voorde et al., 2012). We consider each, in turn, below.

The core characteristic of a Type 1a mutual gains full mediation model is that it hypothesises HRM to have a positive effect on IOP through employee WB. In other words, both the HRM-WB and the WB-IOP component links in the model are assumed to be positive so that the overall impact of HRM on IOP is also expected to be positive and to be fully mediated by employee WB. As such, this is essentially a win-win model of the HRM-WB-IOP relationship, where both employees and management/the organisation are expected to benefit from HRM. Theoretically, this model is rooted in so-called “behavioral perspectives” on HRM (Peccei, 2004). In particular, it is rooted in the idea that HRM, and especially the adoption of what are said to be more progressive sets of high commitment, high involvement, or high performance HR practices, helps to enhance individual and organisational performance through people—that is to say, by enhancing employee positive attitudes and well-being at work (Appelbaum et al., 2000; Guest, 2002).

As noted by Peccei et al. (2013), there are a variety of theories that underpin this mutual gains type of model. One of the theories that has been most commonly invoked in extant studies to explain the potential positive effect of HRM on IOP, through WB, is social exchange theory (Blau, 1964). In particular, it is the idea that the type of progressive sets of HR practices have important positive symbolic effects, as well as material benefits for employees at the workplace. On the symbolic side, for example, they signal the organisations' commitment to employees and to their welfare, and on the material level, they provide employees with valued concrete inducements and rewards at work. Hence, because of both the material benefits and symbolic signalling effects involved, progressive sets of HR practices are expected to contribute to the development of more positive work attitudes amongst employees (e.g., organisational commitment and trust), while at the same time enhancing their work-related well-being (e.g., job satisfaction and positive affect). In line with the norm of reciprocity (Gouldner, 1960), employees are then expected to repay this positive treatment by the organisation by working harder and putting more effort into their job, as well as by engaging in various forms of citizenship behaviour, thereby directly contributing to enhancing both individual and organisational performance (e.g., Tsui, Pearce, Porter, & Tripoli, 1997).

In addition to social exchange theory and the norm of reciprocity, there are a range of other theories and theoretical models, frameworks, and arguments that have been used in extant studies to explain the hypothesised positive effect of HRM on IOP via WB. The most important ones include, for example, self-determination theory (Deci & Ryan, 1985), the Job Demands-Resources (JD-R) model (Demerouti, Bakker, Nachreimer, & Schaufeli, 2001) and the Conservation of Resources (COR) theory (Hobfoll, 1989), as well as aspects of the Ability, Motivation and Opportunity (AMO) framework (Appelbaum et al., 2000), job design and empowerment theory (Hackman & Oldham, 1980; Spreitzer, 1995), and broaden-and-build theory (Fredrickson, 2001; for an overview, see Peccei et al., 2013). Many of these theories and frameworks are relevant also to a number of the other models of the HRM-WB-IOP relationship shown in Figure 1 and will be discussed further later in the paper.

In contrast to the mutual gains model outlined above, in the conflicting outcomes full mediation model (Type 1b), both the HRM-WB and the WB-IOP relationships are hypothesised to be negative rather than positive. In this model, in other words, HRM is assumed to have a negative effect on and to lower WB, which, in turn, is then expected to be associated with and to result in increased levels of performance. In this model, therefore, like in the mutual gains model, the overall effect of HRM on IOP is also hypothesised to be positive. Unlike in the mutual gains model, however, in the conflicting outcomes model, this positive effect is posited to be achieved at the expense of, rather than to go hand in hand with and to be based upon, WB. As such, this is essentially a win-lose model of the HRM-WB-IOP relationship, where management/the organisation is expected to benefit from HRM but at the expense of employees. More fundamentally, therefore, one can think of this as a basic zero-sum game or trade-off model of the HRM-WB-IOP relationship, where any performance gains from HRM necessarily imply and involve well-being losses for employees and vice versa.

Theoretically, this type of conflicting outcomes model is primarily rooted in labour process theory (Delbridge & Turnbull, 1992; Thompson & Newsome, 2004). In particular, central to this model are two key arguments. First is the idea that in order to compete more effectively and maintain and/or increase profitability, management is under constant pressure to, for example, reduce costs, improve quality, raise productivity, and lower unit labour costs. And second is that progressive HR practices are a key means through which management strives to achieve its goals at the workplace. From this perspective, therefore, the self-same more progressive HR practices and systems that in mutual gains models are said to enhance WB, in conflicting outcomes models are considered to have just the opposite effect and to harm rather than benefit employees. For example, HR practices such as training, performance management, and job redesign, as well as High Performance Work Systems (HPWS) more generally, which from the behavioural perspective outlined above are considered directly to contribute to employee satisfaction, motivation, and self-efficacy at work, are viewed in far more negative terms from a labour process perspective. In particular, such practices and systems are seen as leading to a greater intensification and monitoring of work and to a generally more systematic exploitation of employees at the workplace, all of which are seen as directly harmful to their well-being (Peccei, 2004). But it is precisely this increased management control, coupled with the fact that under these type of

high performance HRM systems, employees have to work harder and are under greater pressure on the job, that are seen as making the desired difference to performance and the bottom line, hence encapsulating the WB-IOP zero sum logic underpinning this particular type of conflicting outcomes model (for an overview, see Peccei et al., 2013).

The third full mediation model is a mutual losses one (Type 1c). Unlike in the other two full mediation models discussed above, in this model, the HRM-WB relationship is hypothesised to be negative, whereas the WB-IOP one is presumed to be positive. Hence, in this model, like in the conflicting outcomes model, HRM is assumed to have a negative effect on and to lower WB. However, in this model, unlike in the conflicting outcomes model, low WB is then expected to be associated with and to result in lower, rather than in higher levels of performance. As such, as its label serves to highlight, this is essentially a lose-lose model of the HRM-WB-IOP relationship, where both employees and management/the organisation are expected to lose out from the adoption of various types of HRM practices and systems.

Conceptually and theoretically, this type of mutual losses model can be said to combine elements and arguments from both the mutual gains and the conflicting outcomes models outlined above. Specifically, like the conflicting outcomes model, the mutual losses model tends to start from the premise that, for a variety of reasons, "far from being better off, employees under HRM have less control, have to work harder, and are under greater pressure at work" (Peccei, 2004, p. 5). In other words, the set of progressive HR practices are seen as leading to greater work intensification and strain. Hence, in line with JD-R arguments, they are expected to undermine WB resulting, in particular, in lower levels of health-related well-being in the form, for instance, of increased job stress and burnout (Van De Voorde et al., 2012). However, unlike in the conflicting outcomes model, work intensification and strain are not then seen, particularly in the longer term, as contributing to performance. On the contrary, in line with theoretical arguments from the behavioural perspective, including key arguments from the work and organisational psychology literature (e.g., Warr, Bindl, Parker, & Inceoglu, 2014), the lower levels of well-being that result from increased work intensification and strain are hypothesised to undermine rather than boost individual and organisational performance. Overall, therefore, HRM in this model is hypothesised negatively to affect well-being and, consequently, eventually also to negatively impact performance, to the ultimate detriment of both employees and management/the organisation.

## 2.2 | Partial mediation models

The second major group of HRM-driven models are partial mediation ones (Type 2). As their name implies, the key common feature of these models is that, in addition to hypothesising an indirect relationship between HRM and IOP that is mediated by WB, they also hypothesise a direct effect of HRM on IOP that is not mediated through WB. As such, these models are essentially more complex versions of the full mediation HRM-WB-IOP models outlined above. Specifically, as shown in Figure 1, three main variants of these partial mediation models can be distinguished that directly correspond to their full mediation counterparts. These include (a) a mutual gains, (b) a conflicting outcomes, and (c) a mutual losses partial mediation model (Types 2a, 2b, and 2c, respectively).

Two points are important to note with respect to these partial mediation models. First is that in all three models, the direct effect of HRM on IOP is hypothesised to be positive. In both the mutual gains and the conflicting outcomes partial mediation models (Types 2a and 2b), therefore, the positive indirect effect that HRM is hypothesised to have on IOP through well-being can be expected to reinforce any positive direct effect of HRM on IOP. In contrast, in the mutual losses model (Type 2c), the indirect effect that HRM is hypothesised to have on IOP through well-being is negative. Hence, in this model, the indirect effect of HRM on IOP through WB can be expected to weaken, rather than to enhance, any positive direct effect of HRM on IOP.

The second point concerns the fact that the theoretical arguments underpinning this partial mediation model, and in particular, the hypothesised mediation effect of WB in the HRM-IOP relationship, are essentially the same as the ones used in relation to the full mediation model noted above. Theoretically, the only novelty in the partial mediation model concerns the justification and explanation that is offered for the hypothesised direct effect of HRM on

IOP, an effect that is not explicitly considered in the full mediation models. In particular, the HRM-IOP relationship in partial mediation models is most commonly explained and theorised in terms of the AMO framework (Appelbaum et al., 2000), situational strength arguments (Bowen & Ostroff, 2004), and/or the resource-based view (Boxall, 1996). In terms of the resource-based view perspective, the main argument is that the complex set of HR practices associated, for example, with HPWS or other progressive HRM systems contribute to organisational performance and sustained competitive advantage by enhancing the value, rarity, inimitability, and nonsubstitutability of the organisation's human capital pool (Wright & McMahan, 1992). In contrast, situational strength theory highlights the important role played by HR practices and systems in contributing to performance by helping to structure employee behaviour at work. In particular, internally consistent and coherent sets of HR practices, such as those characteristic of HPWS, are hypothesised to contribute to enhance individual and organisational performance by sending clear and consistent signals to employees about what is expected from them at work, thereby helping to direct their effort and behaviour to organisational desirable goals (Bowen & Ostroff, 2004). Finally, in terms of the AMO framework, the emphasis is on the core idea underpinning this approach that the set of HR practices associated with HPWS or other progressive HRM systems have an effect on individual and organisational performance by providing employees with the necessarily skills and competences to perform at work, as well as with the motivation and opportunity to do so (Jiang, Lepak, Hu, & Baer, 2012).

### 2.3 | Parallel outcomes models

The third major group of HRM-driven models are parallel outcomes ones (Type 3). The key characteristic of these models is that they only hypothesise some form of direct relationship between HRM on the one hand, and both WB and IOP on the other, but do not propose any link between WB and IOP. As such, these models essentially represent simpler versions of the partial mediation models outlined above. As shown in Figure 1, two main types of parallel outcomes models can be distinguished, a mutual gains variant (Type 3a) and a conflicting outcomes one (Type 3b). In the mutual gains model, HRM is hypothesised to have a positive effect on both WB and performance. In the conflicting outcomes one, on the other hand, HRM is expected to have a positive effect on performance but a negative effect on well-being. As such, these two main parallel outcomes models are basically simpler versions of the win-win and win-lose HRM-WB-IOP models discussed above. Importantly, the theoretical arguments commonly advanced in support of the hypothesised links in these two models are much the same as those highlighted above that underpin many of the other models in the area.

### 2.4 | General considerations

Linked to the above analysis, there are three more general points about extant models of the HRM-WB-IOP relationship that are worth briefly noting here and that we will discuss more fully later in the paper. The first point concerns the lack of detailed theoretical elaboration that characterises many of the arguments that are advanced in support of key links and hypotheses in extant models. This is especially true of the link between HRM and WB, which, despite the deployment of a variety of theories and arguments, still remains poorly understood and under-theorised. For example, HPWS and their component HR practices, such as extensive employee training, are conceptualised as job demands in some studies (Jensen, Patel, & Messersmith, 2013) and as job resources in others (Zhong, Wayne, & Liden, 2016) and, therefore, on the basis of J-DR arguments are hypothesised as having either a negative or a positive effect on WB. Often, however, the reason why HPWS and their component practices are best conceptualised and treated as resources or demands and, hence, why these HRM systems should have either positive or negative effects on well-being remains unclear.

The second point concerns the complex and multidimensional nature of both the well-being and performance constructs examined in extant models of the HRM-WB-IOP relationship. The multifaceted nature of these constructs has important implications for HRM-WB-IOP models and theorising. In particular, it directs attention to the fact that

HRM systems and practices may well have differential effects not just on WB and performance as a whole but also, and simultaneously, on different dimensions of both well-being and performance. The decentralised job design practices characteristic of High Involvement HRM systems, for example, may simultaneously contribute to enhance employee job satisfaction and positive affect while at the same time increasing workloads, thereby resulting in higher levels of job stress and burnout and negatively impacting employee health-related well-being (Wood, Van Veldhoven, Croon, & de Menezes, 2012). In other words, there may well be important trade-offs not only between well-being and performance but also between different aspects of well-being and performance themselves. These more detailed trade-offs have received only limited attention to date and, as we discuss more fully below, represent an important area of development in HRM-WB-IOP research.

The third point relates to the fact that, as noted above, there are many more theoretically and empirically meaningful models of the relationship between HRM, WB, and individual/organisational performance than the handful of models outlined so far. A very important additional family of models, for example, is one where the direction of causality instead of being hypothesised to go from HRM to WB and IOP is hypothesised to go from IOP to HRM and/or WB. These IOP-driven, rather than HRM-driven models, have received little or no attention to date. Against this background, we now turn to the empirical part of the study designed to provide a systematic map and critical review of HRM-WB-IOP research over the past 20 years or so.

### 3 | METHODS

#### 3.1 | Study search and selection

A systematic literature search in refereed international journals in the fields of management, HRM, industrial relations, and organisational behaviour was conducted to identify relevant studies. These journals included *Asia Pacific Journal of Human Resources*, *Academy of Management Journal*, *British Journal of Industrial Relations*, *Human Relations*, *Human Resource Management*, *Human Resource Management Journal*, *ILR Review*, *International Journal of Human Resource Management*, *Journal of Applied Psychology*, *Journal of Management*, *Journal of Management Studies*, *Journal of Organizational Behavior*, and *Personnel Psychology*. We chose 2000 as the starting date for our literature search and reviewed the articles from issues published between 2000 and 2018 inclusive. The year 2000 was chosen as the earliest date of interest because, in that year, Appelbaum et al. (2000) and Ramsay, Scholarios, and Harley (2000) published their pioneering studies of the relationship between HRM, WB, and performance, which were soon followed by further major calls for integrating employee attitudes and behaviours into the HRM-organisational performance relationship (Guest, 2002; Ostroff & Bowen, 2000; Wright & Boswell, 2002).

To be included in our review, a study had to meet all of the following four criteria. First, it had to explore the impact of HRM on one or more WB indicators (happiness and/or health well-being), as well as on one or more individual and/or organisational performance indicators (e.g., employee job performance, operational, and or financial performance). Second, it had to report the findings of a quantitative empirical study. Third, it had to test the effect of bundles or systems of HR practices, rather than of individual practice only. Finally, it had to include employee self-ratings of their well-being.<sup>1</sup>

The literature search resulted in 46 studies. The authors of this paper independently coded each article. After discussing a small number of initial discrepancies in coding, the authors were able to agree. The overall results are reported in Table A1 in the Appendix. Note that if more than one HRM, WB, and/or performance dimension was examined in a study, the results are reported separately in terms of models. If a study had both management and employee ratings of HRM, we coded both separately in terms of models if direct effects from both manager and employee rated HRM on well-being and performance were hypothesised. If not, we only coded the one that did hypothesise a direct HRM-WB-IOP effect. For 27 studies, we used employee HRM ratings; for 16 studies, we used management HRM ratings; for two studies, we used a combination of employee and management ratings; and for

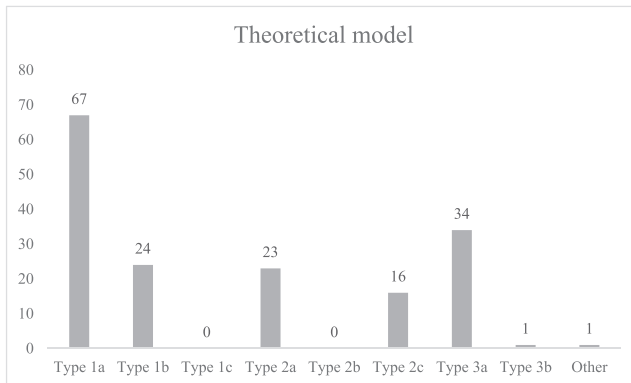


one study, we used both employee and management HRM ratings to code the models. In total, we coded 166 conceptual models and 134 model results.<sup>2</sup>

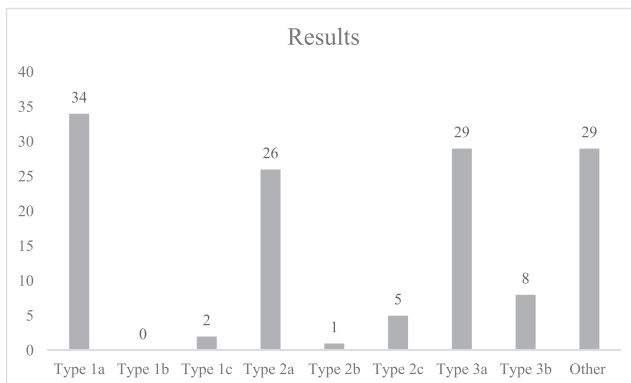
## 4 | RESULTS

Table A1 in the Appendix shows that most of the studies (38) examined happiness well-being (e.g., affective commitment, job satisfaction, and engagement), whereas only eight examined health well-being (e.g., stress, anxiety, and general work-related health well-being) or both happiness and health well-being together. In terms of organisational performance measures, 26 studies included individual outcomes, 17 included organisational outcomes, and three included both outcome types. Turning to the level of analysis, the table shows that the majority of the studies examined relationships at the individual (17) or unit (10) level, whereas 19 studies used a multilevel design. Nine out of the 46 studies used a longitudinal design. Finally, 26 studies investigated moderation and/or mediation effects.

Figures 2 and 3 provide a summary of the specific types of HRM-WB-IOP models that were hypothesised in the 46 studies and the results that were obtained. Figure 2 shows that of the 166 conceptual models examined, full mediation mutual gains models (Type 1a) were the ones that were most frequently hypothesised (67 cases), followed by mutual gains parallel outcomes ones (Type 3a, 34 cases), and by the partial mediation mutual gains ones (Type 2a, 23 cases). Full mediation conflicting outcomes models (Type 1b), partial mediation mutual losses ones (Type 2c), and parallel conflicting outcomes models (Type 3b) were hypothesised much less frequently (24, 16, and 1 cases, respectively) and most of these in one single study (Wood et al., 2012). None of the other mutual losses or conflicting outcomes models (Types 1c and 2b) were hypothesised in any of the studies we examined.



**FIGURE 2** Hypothesised models



**FIGURE 3** Results

The pattern in terms of model results was fairly similar. Specifically, Figure 3 shows that across the set of 134 results we examined, the strongest empirical support was for full mediation mutual gains models (Type 1a, 34 cases), followed by parallel outcomes mutual gains ones (Type 3a, 29 cases), and partial mediation mutual gains models (Type 2a, 26 cases). Very few of the results were consistent with the different types of conflicting outcomes and mutual losses model identified in Figure 1. At the same time, in as many as 29 cases, the results did not reflect any of the main types of HRM-WB-IOP models outlined Figure 1.

## 5 | DISCUSSION

Our review of the nature and development of HRM-WB-IOP research over the past 20 years or so points to a substantial growth in the number of studies that were published in this area over the period under consideration. Thus, the number of HRM-WB-IOP studies increased from 6 in the period between 2000 and 2006 to 15 in the 2007–2012 period to 25 between 2013 and 2018 (see Table A1 in Appendix). Overall, therefore, our results confirm that this is indeed an increasingly important and rapidly growing area of HRM research. This, we suggest, makes it all the more important to take stock of progress as a basis for identifying important avenues for future research in this area. Below, we focus on a number of important theoretical, methodological, and empirical points that emerge from our mapping exercise and that are central to an overall assessment of extant research in the area. On this basis, we then broaden the discussion to consider a number of more general problems and issues involved in HRM-WB-IOP research, including important avenues for future work in the area.

On the theoretical/conceptual side, the first major key finding concerns the restricted number of HRM-WB-IOP models that have been proposed and tested to date. In particular, our results show that only a minority of the main types of HRM-driven models of the HRM-WB-IOP relationship identified in Figure 1 have actually been considered in extant research. Thus, as shown in Figure 2, the bulk of the models (75%) that researchers have focused on to date have been mutual gains ones, involving some form of more or less complex hypothesised set of either full mediation, partial mediation, or parallel outcome relationships. Alternative conflicting outcomes and mutual losses models have received little systematic attention to date. One of the few exceptions here is the study by Wood et al. (2012), where a number of alternative conflicting outcomes and mutual losses full and partial mediation models (Types 1b and 2c, respectively) were hypothesised, alongside more standard mutual gains ones (Types 1a; Table A1 in Appendix, see also Godard, 2001b; Ramsay et al., 2000; Orlitzky & Frenkel, 2005; and Jensen et al., 2013).

This restricted coverage in terms of theoretical models is, at least in part, linked to the restricted range of well-being types covered in HRM-WB-IOP research to date. Thus, as we have seen, extant research is heavily skewed towards so-called “happiness” form of well-being, to the almost complete exclusion of health-related forms of well-being. Specifically, when considering the HRM-WB-IOP relationship, many of the studies included in our review examined a number of different dimensions of well-being simultaneously. In the vast majority of cases, however, the specific forms of well-being that were considered all involved key aspects of happiness well-being (Table A1 in Appendix). Affective/organisational commitment, for example, was considered in over half the studies in our sample, whereas job satisfaction was examined in a further 48% of the studies. In contrast, health-related forms of well-being, such as job stress, were considered in only eight of the studies we examined, thereby highlighting the relative lack of attention paid to these particular forms of well-being in extant HRM-WB-IOP research.

Importantly, this finding echoes findings from previous overviews of the area. In particular, Van De Voorde et al. (2012) highlighted a similar dearth of HRM-WB-IOP studies focusing explicitly on health-related well-being. The continuing tendency for research in this area to privilege happiness aspects of well-being over health-related ones is of concern for two reasons. First, it tends to go hand in hand with and lead to the articulation and deployment of a more restricted range of theoretical models in the area. Specifically, health-related forms of well-being such as job stress and burnout linked, for example, to work intensification, are central to much theorising underpinning conflicting outcomes and mutual losses models of the HRM-WB-IOP relationship (Peccei et al., 2013). Not surprisingly,

therefore, models that tend to be more focused on health-related aspects of well-being, and that hypothesise key potential trade-offs between these aspects of well-being and performance, remain significantly under-represented in extant HRM-WB-IOP research. And second, the failure to consider key forms of health-related well-being, especially in conjunction with core aspects of happiness well-being, means that extant research has, by and large, taken an overly narrow view of well-being that has essentially ignored the multidimensional nature of this construct. As a result, important questions concerning, for example, the extent to which HRM systems may contribute to enhance some aspects of well-being, such as job satisfaction, while at the same time also undermining other aspects of well-being by, for example, generating higher levels of stress and exhaustion, have received little or no attention in extant HRM-WB-IOP research. These are clearly important gaps in understanding that require systematic attention in future research in this area.

The third major point to note on the theoretical side concerns the wide range of theories and arguments that have been used to justify the various HRM-WB-IOP models proposed in extant studies. Given the prevalence of mutual gains models of various kinds, it is not all that surprising to find that social exchange theory is by far the most commonly invoked theory in HRM-WB-IOP research. As noted, however, apart from social exchange theory, a number of other theories and frameworks are also commonly advanced in support of the various hypothesised links in HRM-WB-IOP models. Amongst others, these include, for example, the AMO framework (e.g., Macky & Boxall, 2007) and self-determination theory (e.g., Gardner, Wright, & Moynihan, 2011), as well as aspects of the JD-R model (e.g., Jensen et al., 2013) and theoretical insights from organisational commitment research (e.g., Chang & Chen, 2011). As noted, however, the theoretical arguments that are advanced in support of key links in extant models are often pitched at a rather general level thereby failing to provide fully satisfactory explanations for the links in question. This is the case, for example, with respect to the presumed impact of HRM systems on different aspects of WB and on different aspects of performance. There is an extensive theoretical literature in this area, ranging from Fredrickson's (2001) "broaden-and-build," theory to key aspects of COR theory (Hobfoll, 1989), to a variety of different theories that have been advanced in support of the "happy-productive" worker thesis (Cropanzano & Wright, 2001). Given the wide range of individual and organisational level performance outcomes that have been examined in extant HRM-WB-IOP research, as well as the multidimensionality of the well-being construct and the potential complexity of HRM systems, no single overall theory can reasonably be expected to be able to account for all the relationships of interest in this area (Boxall, Guthrie, & Paauwe, 2016). Strengthening the theoretical underpinnings of HRM-WB-IOP models is, nevertheless, important and is an issue that clearly deserves fuller attention in future research.

Having said this, our review also shows that over half the studies, we examined and included some type of mediator and/or moderator in their analysis in order to better account for key links in their hypothesised models. This is the case especially with respect to the relationship between HRM and WB. Key hypothesised mediators of the HRM-WB relationship include, for example, work intensification and job insecurity (Orlitzky & Frenkel, 2005), employee trust in management (Macky & Boxall, 2007), and person-organisation and person-job fit (Takeuchi & Takeuchi, 2013). Interestingly, trust in management as well as person-organisation and person-job fit were also used as key moderators of the HRM-WB relationship in a number of studies (Boon, Den Hartog, Boselie, & Paauwe, 2011), along, for example, with supervisor communication (Den Hartog, Boon, Verburg, & Croon, 2013), job control (Jensen et al., 2013), and perceived organisational support (Alfes, Shantz, Truss, & Soane, 2013). A further systematic exploration of potential mediators and moderators of the HRM-WB-IOP relationships of interest is clearly desirable, particularly if combined with insights from key theoretical frameworks and perspectives, such as social exchange theory, the J-DR model, labour process theory, the AMO framework, and COR theory.

The possibilities here are many. One line of theorising that may, for example, be particularly useful for gaining a better understanding of the impact of HRM systems on WB involves combining theorising about employee attributions about managerial rationales for the use of particular systems of HRM practices with key arguments from J-DR and COR theory. This type of exercise, we suggest, would help to advance HRM-WB-IOP research by contributing to our understanding of when, how, and why particular types of HRM systems

may be perceived by employees more as bundles of resources or as bundles of demands, or as a mixture of both, with clear implications for both their well-being and performance at work (see, for example, Van De Voorde & Beijer, 2015). This kind of more fine grained theorising, it is worth noting, is becoming more common in studies that focus specifically on the effect of HR practices and systems on various aspects of employee health-related well-being, such as burnout (Kroon, Van De Voorde, & Van Veldhoven, 2009). Theoretical arguments and approaches employed in this cognate area of HRM research could also usefully be deployed in the analysis of the HRM-WB-IOP relationship.

On the empirical and methodological side, the first major point to note concerns the extent to which the models proposed in extant studies actually received empirical support. The picture here is quite mixed. Specifically, our results show that, overall, only 37% of the hypothesised models found empirical support across the studies included in the review. The simpler parallel outcomes models received the strongest support (65%), compared with 48% and 34% support for the mutual gains partial and full mediation models (Types 2a and 1a), respectively.

More generally, as we have seen, the actual results that were obtained in the set of studies we examined tended to cluster around a limited number of HRM-WB-IOP models (see Figure 3). Thus, irrespective of whether or not they were hypothesised, of the main theoretical models identified in Figure 1, only three received systematic empirical support in extant studies. Specifically, as Figure 3 shows, of the models that were observed in practice, 25% were mutual gains full mediation models (Type 1a), compared with 22% and 19% that were mutual gains parallel outcomes (Type 3a) and partial mediation (Type 2a) models, respectively. In contrast, only a small number of analyses, and these all mainly from a five studies (Elorza et al., 2011; Godard, 2001b; Jensen et al., 2013; Ramsay et al., 2000; Wood et al., 2012), provided empirical support to any of the conflicting outcomes or mutual losses models. The rest of the empirical results, covering as many as 22% of the models observed across the set of studies included in the review, failed to provide support to any of the main models shown in Figure 1. Instead, they only provided support for a more limited and fragmentary set of links between the three variables of interest including, for example, cases where only the relationship between HRM and WB, or that between HRM and IOP, or between WB and IOP, emerged as significant.

Once again, however, when considering this pattern of findings, it is important to keep in mind the very limited number of studies that, as we have seen, focused on health-related, rather than on happiness forms of well-being. In other words, it may well be that a stronger focus on models involving health-related forms of well-being would produce a more balanced set of empirical results that are less heavily skewed towards mutual gains type of models of the HRM-WB-IOP relationship. This is clearly an important possibility to keep in mind. Based on extant research, however, a key overall finding of our review is that, to date, there is at best only very limited evidence in support of any of the main conflicting outcomes and mutual losses models of the HRM-WB-IOP relationship that have been theorised by researchers in this area. To the extent that HRM is in fact related to WB and various aspects of individual and organisational performance, the relationships in question are more in line with various types of mutual gains theorisations of the impact of HRM on the other two variables of interest. But, even here, as we have seen, the results of extant research are rather mixed and not always in line or consistent with specific hypothesised mutual gains models of the impact of HRM on well-being and performance.

The other major point to note on the empirical/methodological side concerns the nature of the research design adopted by the studies covered in our review. In particular, we focus on three main features of extant studies: (a) whether they relied on a single source or on multiple sources of data for their measures of HRM, well-being, and performance; (b) whether they used cross-sectional data or some form of time-lagged (noncross-sectional) design; and (c) whether the analysis focused at the individual or unit (e.g., organisational and departmental) level or was based on a multilevel approach. As shown in Table A1 in the Appendix, the vast majority of studies used a cross-sectional design (80%), whereas nearly half (43%) were single-source studies, with employees often providing data on HRM and well-being, as well as performance. Only eight (17%) of the studies examined had a more robust research design based on multisource, noncross-sectional data, whereas nearly half (41%) combined a cross-sectional design with single-source data. Although not uncommon in HRM research, these type of single-source, cross-

sectional designs are clearly problematic because, for example, of potential problems of common method variance that necessarily raise serious questions about the validity and reliability of results (Beijer, Peccei, Van Veldhoven, & Paauwe, 2019).

As shown in Table A1 in Appendix, the studies were more evenly distributed in terms of levels of analysis, with 37% focusing at the individual level, compared with 22% at the unit level and 41% that used a multilevel approach. However, in this context, it is worth noting that, even though not uncommon in HRM research, appropriate aggregation statistics were not always reported in many of both the multilevel and unit level studies we examined (Peccei & Van De Voorde, 2019). In addition, the precise way in which data were partitioned in some multilevel studies was not always clear, whereas in several studies, the nested nature of the data does not appear to have been explicitly taken into account in the analysis. Taken together with the research design issues highlighted above, these analytical issues raise important questions about the validity, reliability, and general robustness of some of the results emerging from this body of research and, as such, point to key areas for methodological improvement in HRM-WB-IOP studies.

The last major point to note has important theoretical as well as methodological implications for HRM-WB-IOP research and concerns the more general question of the direction of causality between HRM, WB, and performance. With the exception of studies by Piening, Baluch, and Salge (2013) and Schmidt and Pohler's (2018), extant research has focused exclusively on HRM-driven models. Alternative IOP-driven models where the direction of causality is hypothesised to go from performance to HRM and/or well-being have not received any systematic attention to date. This is perhaps surprising given that in the wider management literature, the direction of causality between, for example, job and organisational performance on the one hand, and key aspects of well-being, such as individual and unit level job satisfaction on the other, is still a matter of considerable debate (Judge, Thorensen, Bono, & Patton, 2001; Schneider, Hanges, Smith, & Salvaggio, 2003). The same applies with respect to the relationship between organisational performance and the use of HR practices (Peccei & Van De Voorde, 2019; Shin & Konrad, 2017). In other words, the lack of systematic consideration of IOP-driven models in extant HRM-WB-IOP studies represents an important gap in this area of research. Clearly, there is a large family of IOP-driven models that might usefully be theorised and tested in this context including, for example, more ambitious multilevel longitudinal models designed to examine the dynamics of the relationship between HRM, WB, and performance at different levels of analysis over time (Peccei & Van De Voorde, 2019).

## 5.1 | Summary

Our review has charted the development of HRM-WB-IOP research over the past 20 years or so. Two key overall findings stand out from our review. First, at the theoretical level, is the observed dominance of mutual gains conceptualisations of the HRM-WB-IOP relationship, at the expense of alternative conflicting outcomes or mutual losses theorisations of the impact of HRM on well-being and performance. And second, at the empirical level, is the fact that extant research provides support to a number of different models of the HRM-WB-IOP relationship. For the most part, however, these are mutual gains models involving either a direct or indirect positive effect of HRM on both WB and performance. In other words, extant research provides little support for conflicting outcomes and/or mutual losses interpretations of the HRM-WB-IOP relationship. In particular, it provides support for the idea that HRM enhances performance, either directly or through employee happiness well-being. As such, extant research suggests that although WB is indeed an important mechanisms through which HRM affects performance, there are also other potential mechanisms at work here, such as employee skills, that could usefully be incorporated in analyses of the HRM-WB-IOP relationship (Peccei et al., 2013).

Importantly, however, our review also suggests that these conclusions, and the empirical results they are based on, should be treated with some caution because of a number of theoretical, empirical, and methodological limitations of research in the area. In turn, the limitations highlighted in our review direct attention to significant

theoretical, empirical, and methodological gaps in HRM-WB-IOP research and, therefore, to important avenues for further investigation in this area. We return to recommendations for future research below.

## 5.2 | Limitations and recommendations for future research

Although both authors first coded the studies independently following a strict coding protocol and then carefully discussed any differences in coding to ensure consistency, some of the reported conceptual models and results in the studies were open to multiple interpretations. In particular, the coding of whether full or partial mediation was expected and found turned out to be challenging for some studies, because partial or full mediation was not explicitly hypothesised and/or tested. For these studies, if direct effects of HRM on organisational performance and indirect effects via WB were both hypothesised, we coded this as a partial mediation model. If not, we coded these as full mediation models. In addition, to code the results of these studies, we followed the interpretation of the results as presented in the studies themselves. Second, this review only included quantitative studies published in 13 core journals. Although we selected these journals because they are seen as top journals in the general management and organisational behaviour field, or they represent dedicated HRM and industrial relations journals, we are aware that some relevant HRM-WB-IOP studies have been published in other journals (e.g., Vermeeren, Kuipers, & Steijn, 2014) and in books (e.g., Appelbaum et al., 2000), whereas some are qualitatively based and are therefore outside the scope of the present exercise. Although comprehensive, therefore, our review is not exhaustive. A final limitation is that we included results for 30 studies several times (studies with more than one HRM, WB, and/or organisational performance measurement). Therefore, not all the cases provide independent evidence regarding the models.

Despite these limitations, our review, we believe, makes a useful contribution to HRM-WB-IOP research by providing an up-to-date theoretical and empirical overview of the area while, at the same time, helping to highlight important gaps that require more systematic attention in future studies. Here, we focus on three broad areas of inquiry, which, we suggest, deserve particular attention. First is the need to extend the analysis to a wider range of well-being dimensions. Especially important here, as we have seen, would be not only to focus more explicitly on various aspects of health-related well-being but also to consider the role played by different aspects and dimensions of well-being simultaneously as potential mediators of the HRM-performance relationship. In the process, it is important for future studies to devote greater attention to the development and testing of conflicting outcomes and mutual losses models of the HRM-WB-IOP relationship.

Second is the need, as we have seen, to strengthen the theoretical underpinnings of HRM-WB-IOP research. As argued above, an important way of doing this is by systematically extending current mediation and moderation analyses so as to develop a better understanding of why, when, and how key hypothesised relationships between HRM, well-being, and performance are likely to hold. In practice, this would involve developing and testing potentially more complex and elaborate moderated-mediation models of the HRM-WB-IOP relationship. This, we suggest, should go hand in hand with attempts to adopt more rigorous research designs involving multiple respondents coupled with longitudinal data and attempts to adopt appropriate multilevel designs and analytical procedures.

Finally is the need to extend both theoretical and empirical analysis in the area by developing and testing alternative IOP-driven models of the HRM-WB-IOP relationship. Ideally, as noted, this would include the development and testing of more dynamic models of the way HRM, WB, and performance mutually influence each other over time both within and across different levels of analysis. This, we suggest, is likely to prove a particularly fruitful line of inquiry that has the potential significantly to add to our understanding of the relationships of interest in the area.

In setting out these various recommendations for further research, we fully recognise that addressing some of the issues and areas for improvement identified above is likely to involve major theoretical, methodological, and practical challenges. Moreover, it is also important to recognise that dealing with some of these challenges is likely to be made all the more difficult by the continuing underlying lack of consensus and clarity surrounding both the

conceptualisation and measurement of HRM practices and systems (Beijer, Peccei, van Veldhoven, & Paauwe, 2019; Boon, Den Hartog, & Lepak, 2019). More generally, given the multiple challenges involved and the complexity of the theoretical models, data, and analytic techniques required to advance knowledge in the area, a wider debate about the most appropriate and realistic and fruitful ways of contributing to the further development of HRM-WB-IOP research is, we believe, long overdue, as it is in the field of HRM more generally (Wall & Wood, 2005). Central to this wider debate, for example, are fundamental questions about the balance and tension between methodological rigour and theoretical and practical relevance in HRM-WB-IOP research, the problems involved in the push for greater theoretical and methodological “complexification” of research in the area, the value of replications studies, the growing demand for studies that are both multilevel and longitudinal in design, and the relative value and contribution of quantitative versus more qualitative or mixed methods research in this field. These are all issues that are likely to be of interest not just to researchers in the HRM-WB-IOP area but also to HRM scholars more generally. In conclusion, therefore, we hope that the present study will contribute to HRM-WB-IOP research not only by directing attention to important additional lines of inquiry in the area but also by helping to stimulate interest in a wider debate about the very nature and shape of future of HRM-WB-IOP research that should be of interest also to HRM scholars more generally.

## ENDNOTES

- <sup>1</sup> Based on our inclusion criteria, the following type of studies were excluded from the review: (a) those that explored the effect of HRM solely on employee well-being or on performance or that did not explicitly hypothesise effects of HRM on well-being and performance (e.g., Sun & Pan, 2011; Van De Voorde, Veld & Van Veldhoven, 2016; Wright, Gardner & Moynihan, 2003), (b) qualitative studies (e.g., Truss, 2001), (c) those that reported only the effects of separate HR practices (Allen, Shore, & Griffeth, 2003; Raineri, 2017) of HR attributions (Nishii et al., 2008), of HRM system features (Li, Frenkel, & Sanders, 2011), or of a small range of HR practices (e.g., Boxall, Ang, & Bartram, 2011; Kuvaas, 2008), and (d) those with no employee self-ratings of well-being (e.g., Hauff, Alewell, & Hansen, 2014) or with well-being measurements that conflated well-being with potential antecedents and/or outcomes (e.g., Bonsdorff et al., 2018; Katou et al., 2014).
- <sup>2</sup> The reason more conceptual models than model results are reported here is that one study hypothesised as many as 48 competing conceptual models and then used a set of 16 results to adjudicate between them (Wood et al., 2012), hence accounting for the disparity between the number of conceptual models versus model results that we coded and examined.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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## APPENDIX

**TABLE A1** Description of the included studies

Study	HRM	Well-being	Performance	Conceptual model	Results	Level of analysis	Temporal design	Moderator/Mediator
1. Akdere (2009)	Human resource functions (E)	Job satisfaction	Customer satisfaction Financial performance (2x)	3 × M3(a)	2 × M1(a) 1 × M2(a)	Multilevel	CO	
2. Alfes et al. (2012)	HRM practices (E)	Health-related well-being	Task performance OCB Turnover intention	3 × M3(a)	2 × M3(a) 1 × other	Individual	LO	Moderator: Trust in employer
3. Alfes, Truss, et al. (2013)	HRM practices (E)	Engagement	Task performance Innovative work behaviour	2 × M1(a)	2 × M1(a)	Individual	CO	
4. Alfes, Shantz et al. (2013)	HRM practices (E)	Engagement	OCB Turnover intention	2 × M2(a)	1 × M1(a) 1 × M2(a)	Individual	CO	Moderators: POS LMX
5. Ang et al. (2013)	High performance work system (E)	Engagement Job satisfaction	Intention to leave	8 × M1(a)	2 × M1(a) 1 × M2(a) 1 × M3(a) 4 × Other	Individual	CO	
6. Barrick et al. (2015)	HRM practices (E and M combined)	Engagement	Return on assets	1 × M1(a)	1 × M1(a)	Unit	LO	Moderator: Strategic implementation
7. Boon et al. (2011)	HRM practices (E)	Organisational commitment Job satisfaction	OCB Intention to leave	4 × M3(a)	4 × M3(a)	Individual	CO	Moderator and Mediator: PJ-fit PO-fit
8. Browning (2006)	HRM system (E)	Organisational commitment	Customer satisfaction	1 × M2(a)	1 × M2(a)	Individual	CO	Moderator: Sector
9. Chang & Chen (2011)	High performance work system (M)	Affective commitment	Job performance	1 × M1(a)	1 × M1(a)	Multilevel	CO	
10. Choi (2014)	High performance work system (M)	Job satisfaction	Return of assets	1 × M3(a)	1 × M3(a)	Multilevel	LO	Mediator: HPWS effectiveness
11. Den Hartog et al. (2013)	HRM (M and E)	Job satisfaction	Unit performance	2 × M3(a)	1 × M3(a) 1 × other	Multilevel	CO	

TABLE A1 (Continued)

Study	HRM	Well-being	Performance	Conceptual model	Results	Level of analysis	Temporal design	Moderator/ Mediator
								Moderator: Supervisor communication
12. Elorza et al. (2011)	HRM (M)	Affective commitment	Unit productivity Unit absence	2 × M1(a)	1 × M1(c) 1 × other	Multilevel	CO	Mediator: employee perceived HRM
13. Garcia-Chas et al. (2014)	High performance work system (E)	Job satisfaction	Intention to leave	1 × M1(a)	1 × M1(a)	Individual	CO	
14. Gardner et al. (2011)	Motivation, empowerment and skill – enhancing HRM (M)	Affective commitment	Voluntary turnover	2 × M1(a) 1 × other	2 × M1(a) 1 × other	Multilevel	LO	
15. Godard (2001b)	Alternative work practices associated with HPWS (E)	Organisational commitment Job satisfaction Stress	OCB	2 × M3(a) 1 × M3(b)	2 × M3(a) 1 × M3(b)	Individual	CO	
16. Gong et al. (2009)	Performance-oriented HRM system (M)	Affective commitment	Firm performance	1 × M1(a)	1 × M1(a)	Unit	CO	
17. Gong et al. (2010)	High performance work system (M)	Affective commitment	OCB	1 × M2(a)	1 × M2(a)	Unit	CO	
18. Gould-Williams (2003)	High commitment HRM (E)	Job satisfaction Organisational commitment	OCB/extra effort Intention to stay Departmental performance	6 × M2(a)	2 × M1(a) 1 × M2(a) 1 × M3(a) 2 × other	Individual	CO	Mediator: Trust in management
19. Gould-Williams & Mohamed (2010)	HRM practices (E)	Job satisfaction Stress	OCB Intention to quit	4 × M3(a)	4 × M3(a)	Individual	CO	Moderator: Country
20. Guchait & Cho (2010)	HRM practices (E)	Affective commitment Job satisfaction	Intention to leave	1 × M2(a)	1 × M2(a)	Individual	CO	
				3 × M3(a)	2 × M3(a)	Unit	CO	

(Continues)

**TABLE A1** (Continued)

Study	HRM	Well-being	Performance	Conceptual model	Results	Level of analysis	Temporal design	Moderator/Mediator
21. Gurbuz & Mert (2011)	SHRM practices (E and M combined)		Financial and market performance Operational performance Turnover		1 × other			
22. Jensen et al. (2013)	High performance work system (E)	Anxiety	Turnover intentions	1 × M1(b)	1 × M2(b)	Multilevel	CO	Moderator: Job control
23. Kehoe & Collins (2017)	High commitment HRM (M)	Affective commitment	Unit performance	1 × M2(a)	1 × M1(a)	Unit	CO	Mediator: Access to knowledge
24. Kehoe & Wright (2013)	High performance work system (E)	Affective commitment	OCB Intention to remain Absenteeism	3 × M1(a)	1 × M1 (a) 1 × M2(a) 1 × M3(a)	Multilevel	CO	
25. Knies & Leisink (2014)	Supportive HR practices (E)	Affective commitment	Extra role behaviour	1 × M1(a)	1 × M1(a)	Multilevel	LO	
26. Kooij et al. (2013)	Development and maintenance HR practices (E)	Affective commitment Job satisfaction	Job performance	4 × M3(a)	2 × M3(a) 2 × other	Individual	CO	Moderation: Age
27. Korff et al. (2017)	Growth – and maintenance enhancing HR practices (E)	Affective commitment	In-role behaviour	2 × M3(a)	2 × other	Multilevel	CO	Moderation: Age
28. Macky & Boxall (2007)	High performance work system (E)	Job satisfaction Affective commitment	Intention to stay	2 × M2(a)	2 × M2(a)	Individual	CO	Mediator: Trust in management
29. Messersmith et al. (2011)	High performance work system (M)	Job satisfaction Affective commitment	OCB Departmental performance	4 × M2(a)	4 × M2(a)	Unit	LO	
		Job satisfaction	OCB	1 × M3(a)	1 × M3(a)	Individual	CO	Mediator: PO-fit

TABLE A1 (Continued)

Study	HRM	Well-being	Performance	Conceptual model	Results	Level of analysis	Temporal design	Moderator/Mediator
30. Mostafa & Gould-Williams (2014)	High performance work system (E)							
31. Ogbonnaya & Valizade (2018)	HRM practices (E)	Job satisfaction Engagement	Absenteeism Patient satisfaction	4 × M1(a)	3 × M2(a) 1 × M3(a)	Multilevel	CO	
32. Orlitzky & Frenkel (2005)	High performance work system (M)	Job strain	Labour productivity	1 × M1(b)	1 × other	Unit	CO	Mediators: Work intensification Job insecurity Job discretion Moderator: Industry
33. Piening et al. (2013)	HRM practices (E)	Job satisfaction	Customer satisfaction Financial performance	2 × M1(a)	1 × M2(a) 1 × Other	Unit	LO	
34. Ramsay et al. (2000)	High performance work system (M)	Organisational commitment Job strain	Financial performance Labour productivity Quality Absence Turnover Reduction labour costs	6 × M1(a) 6 × M1(b)	4 × M2(a) 1 × M3(a) 1 × Other 4 × M3(b) 2 × M2(c)	Individual	CO	Mediators: Extrinsic motivation Management relations Discretion Work intensification Insecurity
35. Sanders & Yang (2016)	High commitment HRM (E)	Affective commitment	Innovative behaviour	1 × M3(a)	1 × M3(a)	Multilevel	CO	Moderator: Strength of HRM system
36. Schmidt & Pohler (2018)	High performance work system (E)	Job satisfaction	Customer satisfaction	2 × M3(a)	2 × other	Unit	LO	
				2 × M1(a)	2 × M1(a)	Individual	CO	Mediators:

(Continues)



TABLE A1 (Continued)

Study	HRM	Well-being	Performance	Conceptual model	Results	Level of analysis	Temporal design	Moderator/Mediator
37. Takeuchi & Takeuchi (2013)	High commitment HRM (E)	Affective commitment	Turnover intention Job quality					PJ-fit PO-fit
38. Takeuchi et al. (2018)	High performance work system (M)	Affective commitment	In role behaviour OCB-I OCB-O	3 × M2(a)	3 × M1(a)	Multilevel	CO	Moderator: Support climate
39. Wei et al. (2010)	High performance work system (M)	Job satisfaction	OCB	1 × M2(a)	1 × M1(a)	Multilevel	CO	Moderator: Psychological climate
40. Wood and Ogbonnaya (2018)	Role and organisational high involvement HRM (M)	Job satisfaction Anxiety	Economic performance	4 × M1(a)	1 × M1(a) 3 × other	Multilevel	CO	Moderator: Recessionary actions
41. Wood et al. (2012)	Enriched job design and high involvement HRM (M)	Job satisfaction Anxiety	Financial performance Labour productivity Absenteeism Quality	16 × M1(a) 16 × M1(b) 16 × M2(c)	3 × M1(a) 1 × M1(c) 1 × M2(a) 3 × M2(c) 3 × M3(b) 5 × other	Multilevel	CO	
42. Wright et al. (2003)	HRM practices (E)	Organisational commitment	Operational performance (4X) Expenses Profits	6 × M1(a)	2 × M1(a) 2 × M2(a) 1 × M3(a) 1 × other	Unit	LO	
43. Xi et al. (2017)	Partnership HR practices (M)	Job satisfaction Affective commitment	Turnover intentions	2 × M3(a)	2 × M3(a)	Multilevel	CO	Moderator: Labour relations climate
44. Youssaf et al. (2018)	High commitment HRM (E)	Affective commitment	Turnover intentions	1 × M2(a)	1 × M1(a)	Multilevel	CO	
45. Zhang et al. (2016)	High performance work system (E)	Job satisfaction	Intention to leave	2 × M1(a)	2 × M1(a)	Individual	CO	Moderator: Country Mediator: Trust

TABLE A 1 (Continued)

Study	HRM	Well-being	Performance	Conceptual model	Results	Level of analysis	Temporal design	Moderator/ Mediator
Affective commitment								
46. Zhong et al. (2016)	High performance work system (M)	Engagement	In role performance OCB Intention to remain	3 × M1(a)	1 × M1(a) 1 × M2(a) 1 × M3(a)	Multilevel	CO	Moderators: Power distance Collectivism Mediator: POS